GAS JOURNAL

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MEETING THE OVERALL LOAD

FOR many years the Gas Light and Coke Company, now absorbed (?) in the North Thames Gas Board, has studied, as no undertaking in this country has studied, the incidence of current and potential demand for gas on the possibility of making the quantity of gas available at an economic price to the consumer. The Gas Light and Coke Company, holding traditional views on the importance of securing custom through efficient service, had also not only the resources of a major industrial concern, but a lively imagination which adventurously led to the application of new thought. Among many items is that of 'market research,' and we think that in this regard Mr. Stirling Everard (North Thames) influenced those who were responsible for producing the gas which Mr. Everard thought might be required. We also suggest that the statistics on which Mr. Everard based his opinions foreshadowed to no degree of accuracy public demand, and that, in fact, this demand depends on international economic factors which are beyond the range even of this most important unit of the North Thames Gas Board.

However that may be, the important point is that the Gas Light and Coke Company has been in the van in its sympathy with the 'new idea'—the 'new idea' of 1812; the 'new idea' of 1949. In which policy it has incurred criticism and has thrived thereby. We are not writing an eulogy either of the defunct yet living undertaking or of any of its servants, many of whom are renowned not only for their scientific achievements but also for the depth of their beliefs. And we say without hesitation that the papers at the recent conference of the International Gas Union which, irrespective of sponsoring bodies, really emanated from the combined efforts of those engaged by the Gas Light and Coke Company, will influence trend of thought and practice throughout the gas industry of the world. That is one of several reasons why we regard the congress as having been worth while.

We have for long regarded some of the members of an essential, non-poetic, purely utilitarian industry as what we may term gas philosophers. Perhaps we should say philosphers *per se* devoted to the gas industry. If in this connection we single out for the moment Mr. F. M. Birks we do so knowing that his philosopher colleagues will not fault us. Mr. Everard's paper to the I.G.U. conference should be studied side by side with the paper by Mr. Birks; both should be studied in company with the lecture given by Dr. Arthur G. Glasgow to the Institution of Gas Engineers in 1935.

In our issue of July 6 we epitomised Mr. Birks' paper and published a full report of the discussion on it. In present circumstances, said the author, the total gas-making capacity of a gasworks might be made up approximately as coal gas plant 50 to 65%, carburetted water gas plant 40 to 25%, oil gasification plant 10%. What, we wonder, would have been the reaction of Dr. Charles Carpenter to this point of view? Conditions have, of course, altered since the hey-day of the South Metropolitan, and we discern a flicker both of interest and sympathy in the eye of Mr. Robert W. Hendee, President of the American Gas Association, when he read Mr. Birks' paper. And the flicker must have assumed a glow when he heard Mr. Birks summarise his contribution. In that introduction the author stated plainly enough that carburetted water gas might well carry a higher proportion of the seasonal load than is at present common practice in this country. He pointed out that the contribution was written six months prior to the I.G.U. meeting in order to make it available for all in the printed form, and that since that time he had had to consider a programme for the installation of plant to meet steadily increasing demands. Further investigation into the likely effects of coke price movements in relation to coal and fluctuating labour requirements 'all seemed to weight the advantages of carburetted water gas for carrying even greater proportions of the seasonal demand than were indicated in the paper.'

Mr. Birks added that, to obtain the technical advantages of smooth and steady operation of the carbonising plant and to find the most constant employment for labour, all short-term fluctuations in demand might be met by carburetted water gas *even during the summer months.* He also pointed to the capital outlay involved by the storage of the raw materials for gas making, and emphasised that the storage of gas oil involves lower capital charges than any of the other available fuels. And the signpost of Mr. Birks' paper? The Minister of Fuel and Power has the the formidable task of correlating the use of coal (irrespective of its semi-refined form as coke or of the two rival derivatives in the form of gas and electricity) with the import of oil for gas making. Would it be too much to ask Mr. Hugh Gaitskell to have a chat with Sir Stafford Cripps on this matter, or to ask Mr. Alfred Robens to discuss the question with his counterpart in the Treasury, the Rt. Hon. W. Whiteley?

WARNING

ARE the nationalised fuel industries intending to fight one another? We hope that these industries will continue to fight with good heart, but not below the belt, each in its particular interests. If the fight does not continue, then the referee, the Minister of Fuel and Power (at the moment Mr. Hugh Gaitskell) will find that the public will be ill-served. We now have the fuel industries 'under one umbrella'—all very good. We hope that this will not crush enterprise, that it will not result in the National Coal Board becoming a harsh and arbitrary father to widely differing children in gas and electricity and the adopted child oil. At the moment the N.C.B. adopts a haughty attitude. It doles out inferior coal to those naughty grabbing children, gas and electricity. The adopted child, oil, of the Ministry of Fuel and Power has little assurance from its foster-father. We should not like to see the dove of peace as a white or

yellow insect in the new, all embracing, umbrella. Colonel W. M. Carr, Chairman of the North-Western Gas Board, is certainly nothing if not a fighter, and we have for long admired him for this spirit. Colonel Carr cares much more than a 'tinker's cuss' about the welfare of the gas industry and few could be more knowledgeable to discuss the problem of the supply of coke oven gas for distribution to the community. As a result of many years of experience, he believes that the production of gas from coke ovens should be under the control of those who are responsible for the public supply of gas. Dual control, with the N.C.B. having a finger in the pie, has already given rise to difficulties and failures. There is at present a committee of the N.C.B. and the Gas Council which is considering this question of the supply and purchase of gas from coke ovens owned and operated by the Coal Board, and the future extensions of such supply. His view, which we endorse, is that both parties—we almost said antagonists—should simultaneously put forward their schemes, and that no scheme should be sanctioned and put into effect unless it could be proved that it would be to the ultimate advantage of the consumer. Colonel Carr has in fact issued a warning (published in the *Journal* last week) which we trust will be heeded in high quarters.

GOLDEN JUBILEE NUMBER

WE warmly congratulate all concerned with the publication of the Jubilee Number of our contemporary, the *Petroleum Times*. Our understanding of the work involved in the preparation of special issues of the kind has perhaps been deepened in that we ourselves published the Centenary Number of the *Gas Journal* in April last. For 50 years the *Petroleum Times* has served the oil industry of Great Britain and the international oil industry generally most effectively. Its well informed editorial comment has on many occasions led the way and the standard of its technical content has been maintained continuously at high level. And it follows from this almost axiomatically that the *Petroleum Times* itself has been well served by its editors, of whom since 1899, there have been three. The present editor, Mr. Cecil W. Wood, who has been associated with the paper in an editorial capacity for 22 years, has been responsible for the historical review of the oil industry which constitutes the bulk of the editorial matter in the 230-page Jubilee Number. We have not yet read the review in its entirety, but we have read a good deal of it to great advantage. The story of the 50 years is told in five-year periods and is a fascinating and a valuable record—a record to which the word unique properly applies. We suggest that this individual effort might well be considered for publication later, maybe in revised form, as a book. We feel sure that as such it would prove of great value to the oil companies and their personnel, technicians and others whose work links with oil production, distribution, and use, and to students.

The Jubilee Number of the *Petroleum Times* is well printed, well illustrated, and is noteworthy for the standard of its advertisement pages as well as for the merit of its technical and historical content. Reference to its pages will long continue, resulting in both knowledge and pleasure.

GREATER LONDON PLAN

Mr. Lewis Silkin, the Minister of Town and Country Planning, has decided, it is announced, to allow the London County Council to develop about 422 acres at Farnham Royal and 264 acres at Langley, Buckinghamshire, for housing, but has refused permission for the use of about 150 acres of rural land for housing and 117 acres for industrial development in the area. The two schemes approved will house about 17,250 people—a major contribution towards reaching the population of 110,000 in and around Slough which is proposed in the Greater London plan. The decision follows a local inquiry held into the London County Council's appeals against the refusals of Slough and Eton Councils to permit the development on the ground that the future development of Slough would be prejudiced.

COAL FINANCE AND OUTPUT

The financial results of the working of the National Coal Board for the first quarter of the current year were commented on by the Chairman, Lord Hyndley, speaking at Dover on Saturday last. He expressed the view that the results would show a considerable improvement on 1948. He expected that the figures would be published soon. The average profit a ton in Britain would probably amount to something over 1s. The improvement in output was, however, less satisfactory. Production of deep-mined coal during the first half of the year was better than last year by about 2,700,000 tons. He felt that they could and must improve on this. 'We may have done better, but not well enough,' he commented. 'To get 207 mill. tons, which I consider to be the absolute minimum, we shall have to average in the second half of this year 4,300,000 tons a full working week. Last week—although I am well aware that there were a lot of holidays to take into account—we got only 3,762,000 tons.'

ELECTRICITY SURCHARGE DROPPED

Shortly before his appointment as Chairman of the Scottish Gas Board, Sir Andrew Clow presided over a Committee on Domestic Peak Load Electricity, on whose recommendation the Ministry of Fuel and Power last winter sanctioned a surcharge of 0.35d. per unit on domestic electricity bills for the heaviest winter quarter, with a rebate of 0.1d. per unit for the remaining nine months of the year. On July 11, Mr. Hugh Gaitskell announced in the House in answer to a question that the levy was to be dropped. Its purpose, he recalled, was to reduce the domestic electricity load during the peak hours of the winter and so diminish the risk of load shedding for industry. There was, in fact, very little load shedding last winter, but it was not possible to prove conclusively that this was due to any material extent to the differential tariff. He had now been informed by the British Electricity Authority and the area Boards that they did not favour the continuance of the differential tariff next winter, and in this they were supported by the majority of the electricity consultative councils and by the electricity sub-committee of the National Joint Advisory Council. In view of this advice, of the fact that the tariff was regarded by many as harsh and unfair in its incidence, and of the absence of cogent evidence that it exercised a sufficiently decisive influence on peak demand, he did not propose to ask the electricity boards to continue it next winter. He warned the House, however, that the gap between generating capacity and peak demand was unlikely to be much less next winter than last, and domestic consumers must therefore limit their demand during peak hours in cold weather if load shedding on a serious scale was to be avoided.

RECORD STEEL PRODUCTION

The British Iron and Steel Federation states in the July number of *Steel News* that more steel was produced in Britain in the first six months of 1949 than in any previous six months. Even though the Whitsun holiday fell in June, production was a record for the month of June, being at an annual rate of 15.6 mill. tons. This brings the total production for the first six months of the year to 7,949,000 tons. Allowance always has to be made for summer holidays, which reduce output during July and August. Despite the holidays, however, there is now confidence that the Government target of between 15¼ and 15½ mill. tons for 1949 will be reached, if not exceeded—always assuming there is no slackening in demand (as in U.S.A.). If the Government target figure for 1949 is exceeded, it will be the third year in succession that this has been done. In 1948 the Government, in setting a target of 14 mill. tons, described it as 'barely attainable.' The industry finally passed 14¾ mill. tons. Production has increased by 34% since 1938. This achievement is the more remarkable when it is remembered that in a heavy industry like iron and steel the construction of new plant takes years, and was not possible during the war. Throughout its history, the industry has always planned well ahead. Between 1920 and 1939 many vast reconstruction and building works were carried out. By the end of the war a five-year development plan, costing £250 mill., was put into operation. It is thanks to this vision and enterprise that the increased production is possible. The Federation statement adds that during the present economic crisis British iron and steel will be able to make a vital contribution to Britain's welfare.

JULY GAS SERVICE

In the *Journal* of Jan. 12 last we published a short note which we thought echoed the sentiments of at any rate a large part of the gas industry. We were referring to the introduction of *Gas Service* in its new apparel, speaking less of the graciousness of the Paper Control than, in what we thought becoming modesty, of our own efforts. The day after we mentioned our aims in this regard in these columns the January issue of *Gas Service* appeared in its new and enlarged format and was duly circulated to its readers. We hoped that the transformation effected would receive a warm welcome from the gas industry. We were not mistaken and, of course, extend our thanks. Feeling that we were right in our interpretation of what was (and is) needed on the gas service front we now take the liberty of returning to the subject for a moment. The response to the January issue of *Gas Service* was immediate and gratifying; readers were unanimous in their view that the interests of those on the sales and service side had never been advanced to such purpose. Indeed, the matter was soon put to the test when the Gas Salesmen's Circles demanded increased recognition. *Gas Service* became the spearhead of their campaign, which resulted in the general conference of salesmen on March 25. Not content with this success, *Gas Service* pressed for further statements of policy from the Gas Council and followed the subsequent deliberations of salesmen with persistence. The need for caution, stressed in the editorial columns of the June issue, had immediate repercussions, bringing letters, some of congratulation and others of criticism. In the main, however, it is clear that *Gas Service* has the support of the majority of those concerned with the future structure of the Circles and the status of salesmen, and may be regarded as the mouthpiece of this section of industry. We therefore suffer from no qualms of mock-modesty in calling attention to the current issue, which within its covers encompasses much of general interest and specific technical information in an original and thought-provoking way.

Personal

Employees of the former Southampton Gaslight and Coke Company on July 11 presented to their former Managing Director, Mr. S. E. Whitehead, a silver tray as a token of esteem on his appointment to the Deputy Chairmanship of the Southern Gas Board. Mr. G. Neil, now Engineer and General Manager to the Southampton and District Gas Undertaking, said that the former Company had made considerable progress since Mr. Whitehead came to Southampton 19 years ago. The works had

Mr. Whitehead receiving the presentation.

installed a modern plant and the efficiency of the Company generally was directly the result of Mr. Whitehead's leadership. He referred to the difficult war years and the confidence inspired by the knowledge that their chief would always be at their side to meet any emergencies. Mr. T. E. D. Mason, former Secretary to the Company, Mr. S. H. Edwards, Sales Department, Mr. R. E. Williams, Assistant Secretary, Mr. C. J. Phillips, Assistant Engineer, Mr. E. L. Noyce, Distribution Department, and Mr. F. W. Freeth, added their tributes. Mr. H. R. Nixon, one of the oldest members of the Company, presenting the gift, asked Mr. Whitehead to accept the tray as an expression of esteem and loyalty, and wished him good health and every success in his new office.

Mr. Whitehead, in reply, said he was gratified and proud to feel that he retained the goodwill and friendship of those with whom he had had the privilege to work. They had been a happy family and this had largely been due to the fact that they had served under two excellent and generous Chairmen, Sir Russell Bencraft and Brigadier Jack. He was sure they would all do their duty as servants of the public and serve the new Gas Board as well and as cheerfully as they had served the old Company.

Sir Edgar Sylvester, K.B.E., F.C.A., Chairman of the Gas Council, formally received his honour of Knighthood of the Order of the British Empire at the hands of the King at the Investiture at Buckingham Palace on July 12. In this photograph Sir Edgar is seen showing the insignia to Lady Sylvester (left) and his only daughter, Mrs. Roy Dexter.

Mr. LEOPOLD FRIEDMAN has resigned from the Board of Thomas De La Rue and Co., Ltd.

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Mr. A. E. TULLBERG, formerly Publicity Manager of the Brighton, Hove, and Worthing Gas Company, has been appointed Publicity and Information Officer to the South Eastern Gas Board. He will take up this appointment on Aug. 2 and will then work from Katharine Street, Croydon.

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Mr. A. R. TURNER, of Bedford, Acting General Manager at Bedford since the end of March when his father, Mr. Richard Turner, retired, has been appointed Divisional Commercial Manager to the Cambridge Division of the Eastern Gas Board. He was with the Bedford undertaking before the war and returned in 1947 to become Assistant General Manager.

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Mr. D. BEAVIS, Deputy Controller of the Edinburgh and South East Division of the Scottish Gas Board, writes to clear up some confusion which he says has arisen as a result of the brief published personnel details for the area. The principal officers for the Edinburgh and South East Division are Mr. D. J. Colvin, *Controller;* Mr. D. Beavis, *Deputy Controller;* Mr. J. MacNab Weir, F.I.M.T.A., *Accountant.* Within the division, which includes about 40 undertakings, a group has been formed consisting of Edinburgh and eight neighbouring undertakings. Besides being Deputy Controller for the division Mr. Beavis is *Manager* of this group, and Mr. J. G. Kennedy is *Accountant* of the group, and both Mr. Beavis and Mr. Kennedy exercise similar functions in respect of the Edinburgh undertaking itself.

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Mr. H. R. HART, M.S.M.A., F.R.S.S., of the North Thames Gas Board, has been appointed Commercial Manager of the East Midlands Gas Board and has taken up his appointment at the Board's headquarters, Millstone Lane, Leicester. Mr. Hart began his career in the gas industry as a staff pupil with the Gas Light and Coke Company in 1928. In 1935 he was appointed Assistant Distribution and Sales Superintendent to the North Middlesex Gas Company and in the following year Sales Manager. During the war Mr. Hart served as a Major with the Royal Artillery and Commandoes and also as a Captain with the Parachute Battalion of the Royal Engineers. Returning to the gas industry after the war he was appointed Sales and Service Manager of the North Middlesex Gas Company. He was the winner of the Milbourne Award for 1947-48 for his paper on 'Service Administration and Work Planning.'

As already announced, Councillor C. E. P. STOTT, J.P., has been appointed Chairman of the North Western Gas Consultative Council. The Minister of Fuel and Power has now announced the names of the rest of the members of the North Western Gas Consultative Council as follows: Mr. J. E. AINSWORTH (Oldham), Mrs. E. E. BEAVAN, J.P. (Manchester), Mr. J. K. BOOTH, J.P. (Preston), Councillor R. M. BRADBURN (Birkenhead), Councillor H. BRADBURY (Northwich), Mrs. E. DENBY (Liverpool), Councillor J. B. DIXON, J.P. (Windermere), Alderman T. GLAISTER, J.P. (Bolton), Mr. G. E. INTIN (Salford), Alderman H. JOHNSON (Blackburn), Councillor A. W. LOWE (Liverpool), Mr. S. McKELVEY (Manchester). Alderman J. MILLER (Barrow-in-Furness), Councillor S. MORRIS (Blackpool), Councillor W. ONIONS, J.P. (Manchester), Councillor F. H. SMITH (Hoylake), Alderman J. SMITH, O.B.E., J.P. (Crewe), Councillor W. SMITH, J.P. (Burnley), Mr. W. H. STABLES (Kendall), Mrs. E. TAIT (Manchester), Councillor J. TAYLOR (Glossop), Mr. B. A. WILLIAMS, O.B.E. (Chester), and Miss G. M. WOOD (Broughton). The Consultative Council has been accommodated in the Town Hall, Manchester, 2, and the address of the Chairman is Room M.17, (Telephone Central 3377, Ext. 556).

Obituary

For many years a Director of Peterborough Gas Company, Mr. H. J. AMIES died on July 10 in a Cambridge nursing home at the age of 82. He played a prominent part in the development of Peterborough Gas Company and at the time the industry was nationalised he was Deputy Chairman.

News in Brief

Skegness Urban District Council has been informed that as from the next meter readings the price of gas for public lighting will be increased by 1d. per 1,000 cu.ft.

Jarrow Corporation has approved plans by the Northern Gas Board for a 10-in. gas main from the Jarrow gasworks to Cemetery Bank in connection with the development of the Simonside Estate where about 1,000 houses are to be built. The Board is also completing the laying of a large main from Jarrow works to Hebburn.

Scottish Tar Distillers, Ltd., are to erect modernised distilling plant at Falkirk at a cost estimated at £19,290. Approval for the work has been given at the Falkirk Dean of Guild Court. The Scottish tar distilling industry made a notable contribution to the supply of essential raw materials over the war years and has since maintained and developed that position. Deferred overhauling and modernisation of the industry's plant is now being systematically effected.

The Cooking by Gas Campaign initiated last September by the British Gas Council (London District) is being continued by the North Thames, South Eastern, and Eastern Gas Boards until September. The campaign covers London and a good deal of the Home Counties, and makes use of the London evenings, some 50 suburban newspapers, London and country buses, trams, trolley-buses, and more than 1,200 16-sheet sites, of which 200 are on the Underground. Double crown posters are being displayed on vans and in showrooms. Special showroom window displays have been prepared. Film slides will be used in cinemas, and special folders both for domestic and large scale gas cooking will be issued.

Malton Coke Ovens and By-product Plant, Lanchester (Co. Durham) owned by the Northern Divisional Coal Board have been closed down as uneconomical and 48 men have become redundant. The plant is to be dismantled and about 70 men have been retained for this work, which will occupy several months. The plant was owned by Sadler and Co., Middlesbrough, before nationalisation and was started 56 years ago. During the last war the plant received a direct hit in an air raid and the benzole plant was destroyed. Eighteen months ago a fire destroyed the large coal stocks and hopper and put the aerial flight from Esk Hill Top Colliery out of action. Since then coal needed for the works has been carried by road.

A Cargo of 1,200 Tons of Coal lying at the Limerick docks for the gasworks remains undelivered because of the refusal of the Hired Carters' Society to permit a lorry belonging to the gasworks to take part in the delivery of the coal. Conferences held by the Mayor of Limerick and certain members of the Corporation with the object of effecting a settlement of the dispute have proved abortive. An advertisement by the gasworks warns the public that the works will have to close down at the end of July if the coal is not delivered. In the interval, there will be a general restriction of pressures throughout the city.

The Largest Coal Cleaning Plant in the country is to be installed at Lynemouth Colliery, Northumberland. It is not only an integral part of the programme which the National Coal Board has set in motion to improve the quality of coal, but a section of a £2½ mill. reconstruction scheme embracing Lynemouth and Newbiggin collieries in the Northern Division. This scheme, by which production will be concentrated at Lynemouth Colliery, will increase the output of coal from these collieries from 600,000 tons a year to 1½ mill. tons a year. Work on the new washery, which will cost £731,000, will be started as soon as possible and will be completed in about two years' time. All the coal produced at Lynemouth, and also from Ellington Colliery, 1½ miles away, will be cleaned there. The new plant will be capable of dealing with the largest pieces down to the finest particles of coal and will clean 800 tons an hour.

South Shields Corporation is being recommended to approach both the Northern Gas Board and the North Eastern Electricity Board for the taking over, by the Corporation, of the maintenance of street lighting.

Dame Vera Laughton Mathews, Member of the South Eastern Gas Board, addressed the Brighton, Hove, Worthing, Shoreham, and Homecraft Circle branches of the Women's Gas Council on 'Nationalisation and the Housewife' in the famous Music Room of the Royal Pavilion, Brighton, on July 7. Mr. C. R. M. Croft, General Manager of the Sussex Division, presided.

At the First Annual General Meeting of the Airdrie Branch of the Women's Gas Council, it was reported that the membership had grown from 25 to 71. Office-bearers were appointed for the ensuing year and reports given by the delegates who attended the recent Economic Conference held in Glasgow and the Annual Conference at Harrogate.

The National Smoke Abatement Society's 16th annual conference will open at Harrogate on Sept. 28, with the Presidential Address by Lord Simon of Wythenshawe, and will close on Sept. 30, with a conference dinner. Between these events there will be a civic reception by the Mayor of Harrogate, a visit and address by Mr. A. Blenkinsop, M.P., Parliamentary Secretary to the Ministry of Health, four conference sessions, and a late afternoon excursion to Fountains Abbey. The subjects for the conference sessions will be a discussion on a further series of 'Progress Reports,' which was the most popular feature at Cheltenham last year; the difficult problem of burning colliery spoilbanks, with an opening paper by a representative of the National Coal Board, Mr. J. Carr; and a paper on the story and work of the Fuel Research Station by its Director, Dr. A. Parker.

GAS ARBITRATION TRIBUNAL

The Lord Chancellor has appointed Sir JOHN HOWARD to be legal member and President, except as to Scottish proceedings, and Sir FREDERICK ALBAN, C.B.E., J.P., F.S.A.A., and Mr. E. C. ELLEN, C.B.E., M.C., to be members of the Gas Arbitration Tribunal to be set up under Section 63 of the Gas Act, 1948. The Lord President of the Court of Session has appointed Mr. D. A. MORTIMER to be the legal member of the Tribunal in relation to proceedings which are to be treated as Scottish proceedings. Mr. Mortimer will act as President of the Tribunal in such proceedings.

Sir John Howard was formerly Chief Justice of Ceylon. Sir Frederick Alban is President of the Society of Incorporated Accountants and Auditors and is a member of the Electricity Arbitration Tribunal. Mr. Ellen was Manager of the Union Discount Co. and Chairman of the London Discount Marketing Association from 1940 to 1947, and is a member of the Electricity Arbitration Tribunal. Mr. Mortimer is a Dundee Solicitor who from 1943 to 1945 was part-time, and from 1945 to May, 1948, full-time, Chairman of Pensions Appeal Tribunals in Scotland; he is the legal member of the Electricity Arbitration Tribunal in relation to Scottish proceedings.

Diary

July 27.—**British Standards Institution:** Annual General Meeting, 24, Victoria Street, S.W.1, 3 p.m.

Sept. 8 and 9.—**Combustion Engineering Association:** Conference on the Rational Allocation of Coal, Palace Hotel, Buxton.

COMMERCIAL KITCHENS—A GUIDE TO BETTER PERFORMANCE*

[Reviewed by 'T.A.T.']

AN American treatise on the commercial kitchen has now been published in book form. The matter has been set up in good readable type. In many cases the illustrations are one column wide giving easy reference to the text in the parallel column. Prepared under the supervision of the Food Service Equipment Committee of the Industrial and Commercial Gas Section of the American Gas Association, the book 'has been written to cover the story of Gas in the Commercial Kitchen—what gas is, why it is a superior fuel, and how best to apply it.' Intended primarily for the use of gas salesmen and dealers in commercial cookery equipment, much of the book is of interest to all concerned with cooking on the commercial scale, in the thousands of hotels, restaurants, cafeterias and institutions where gas, in the U.S.A., holds 85% of the field within reach of the gas mains.

The American people 'love to eat out, often and well' and food is expected to be tastily cooked and served. But the American people is made up of a large number of nationalities, peoples who still retain their taste for their native foods. It follows that the American kitchen is called upon to cook in many styles other than the Anglo-Saxon. The Italian, the Scandinavian, the Oriental, all expect to get dishes to their taste. Many of these establishments are so large and with so varied a call upon their service that no less convenient a fuel than gas could hope to fill their requirements.

The book opens with a brief description of the American gas industry, an elementary account of the different gases available—a much more complicated affair than in this country—and the physics of heat and combustion. It proceeds to survey the market for commercial gas equipment and gas service. 'Over 32½ billion meals are served annually in all types of non-domestic feeding establishments in the U.S.A. Eleven to 21% of total gas sales are in the commercial cooking field, and, except in remote areas gas fuel is used in 92% to 98% of all eating establishments.' These establishments are classified in percentages: 58% are restaurants, 14% are hotels (of which the total number of all types is given as 27,987), 6% industrial restaurants, and 22% other eating places, including hospitals, schools, clubs, &c. The use of gas in these establishments goes far beyond the cooking itself. Great emphasis is laid upon sterilisation in dish-washing, most of it done in washing machines, requiring immersion in water at 170° F. or higher for a specified time. The gas water heater is indispensable to ensure a fast, cheap, and reliable service for this operation. The great range of climate, both geographical and seasonal, calls for hot meals and cold meals (necessitating the gas-operated refrigerator) as well as space heating or air conditioning for restaurants and kitchens. Many of these establishments are on crowded city sites where the absence of need for fuel storage space gives gas an immense advantage over its competitors. And thermostatic control, more readily and with more precision applicable to gas-fired appliances than any others, ensures a high degree of economy when operating under varying conditions and times of service.

A very long chapter is devoted to the description, with all relevant data, of the immense number and variety of gas appliances available and in use. Beginning with a well illustrated section dealing with burners, pilot flames, and thermostats, this chapter covers the main cooking ranges, ovens, broilers and fryers of the kitchen, a large variety of counter cooking appliances, coffee makers, griddles, hotplates, toasters, &c., steam cookers, stock kettles, pressure saucepans, food warmers and refrigerators, dishwashing equipment, water heaters—all fully illustrated and complete with consumption data.

A short chapter deals with the elementary science of cooking and the several cooking methods from the dietetic point of view. Three long chapters, with much detail and data and many sketches and plans deal fully with the planning of new kitchens, the modernisation of old ones and the layout and routine of kitchen operation. Methods and details of the estimation of hot water requirements are very fully treated. A fully worked out illustrative example, for instance, shows that for an establishment catering for 200 breakfasts, 400 lunches, and 300 dinners as much as 990 gal. (American) of water at 140°F., 66 gal. per maximum hour, may be required per maximum day, plus 580 and 125 gal. at 180°F. per day and per hour respectively. These demands can be met by apparatus described in the book, in which are also described several types of hot water plant with tables of capacities. Indeed, one of the surprising features of the book is the space and detail devoted to hot water supply and dish-washing machines. Ventilation of, and the removal of hot air and fumes from, kitchens are extensively described and illustrated. The design of hoods over cooking appliances is treated in an interesting and informative manner.

The layout of kitchens is dealt with in an excellent chapter fully illustrated by plans and data. The problem is essentially similar to that of any other factory. It is one of securing a rational and progressive flow of raw materials to and the finished product and waste from and through the plant, complicated in this instance by the problem of reducing to the minimum the amount of ground to be covered by cooks, attendants, and waiters in the performance of their several duties. It is easy to see what an advantage there is in the use of gas, requiring no provision for manual or mechanical supply to and from the apparatus. Numerous examples of kitchens, large and small, are depicted in the plans reproduced.

Two chapters treat of the properties of fuels other than gas, solid and liquid fuels and electricity, and of computations and comparisons of cost, providing the data needed by the gas salesman in defending and supporting his own propositions and recommendations. And the book closes with a general treatment of important steps in customer contacts, descriptions of the hierarchy of management of large hotels, hospitals, clubs, and restaurants. Such miscellaneous technical data as may be useful to the gas salesman are collected in an appendix.

The book is admirably, even racily, written as by men who really know and like their subject. All the illustrations are good. It may be objected that culinary practice suited to so wide a variety of foods and styles of cooking, to climates ranging from the tropical of the Southern States to the sub-tropical of the middle regions and approaching the sub-arctic in the winters of the north, may be too elaborate for the digestion of the British salesman whose conditions are uniform over the whole of his field of action—that equipment designed for the monster kitchens of a Hotel Astoria or a cafeteria serving 4,500 meals per day and open 24 hours daily, may be outside the experience of a smaller country. But it will be conceded that a salesman armed with this knowledge and with access to this data will not be easily daunted by any proposition likely to come his way. This book can be confidently recommended to the advanced study of the British gas salesman and particularly to those engaged in his education and training.

*By C. George Segeler and J. Stanford Setchell. Published by the American Gas Association, 1948 Demi-quarto, pp. 242. Price $10.

UNIVERSITY OF LEEDS

The following results of the examinations held in June last are announced.

Gas Engineering (*B.Sc.*):—R. Clennett, C. S. Finney, R. T. Heggen, E. J. Lawton, J. C. Taylor.

B.Sc. with Honours.—Class 1:—E. G. Jackson. Class 2:—D. Barrett, R. M. Gill, J. C. Hines.

Post Graduate Diploma (*Gas Engineering*):—B. Jackson, B.SC., E. Potts, B.SC. (*Chemical Engineering*):—M. Ellis, B.SC., J. Greenwood, B.SC., P. H. Whitaker, B.SC. *Chemical Engineering. B.Sc., with Honours.* Class 1: D. J. Atkin, awarded Le Blanc Medal. Class 2:—L. R. Graham, B. Pollard.

Fuel and Metallurgy. B.Sc., D. H. Williams. *Metallurgy. B.Sc.*, P. Heptonstall, C. F. Hopkinson, I. B. McKnight, D. Worth. *M.Sc.*:—Miss E. Evans, B.SC., J. H. Towler, B.SC., P. Wedgwood, B.SC., G. E. Hall, B.SC. *Ph.D.*:—J. B. Stott, B.SC., Heung-Sung Chung, B.A.

Graduates who are or had been associated with the gas and allied industries, are as follows:—R. Clennett, Hartlepool Gas Undertaking; C. S. Finney, Bilston Gas Undertaking; R. T. Heggen, Holyhead Gas Undertaking; E. J. Lawton, Wellington (Salop) Gas Undertaking; J. C. Taylor, Bath Gas Undertaking; P. Wedgwood, Watford and St. Albans Gas Undertaking; G. E. Hall, British Coke Research Association; Miss E. Evans, J. H. Towler, Research Assistants, Joint Research Committee of the Gas Research Board and the University of Leeds.

The North Western Gas Board has announced a reduction in gas prices at Earby and Thornton in the Craven district, as a result of better co-ordination between neighbouring gas undertakings made possible by the area Board structure of the industry.

GAS BOARD'S PLANNED PROGRAMME

The North Eastern Gas Board, whose membership is now complete, began a planned programme of works inspections on June 27 by paying a visit to the New Wortley works of the Leeds undertaking.

The Board has approved several measures of re-organisation and development at these works, providing for the installation of an intermittent vertical chamber plant having a capacity of 5 mill. cu.ft. per day and involving a capital expenditure in the region of £600,000. The first part of the scheme, giving a 2½ mill. cu.ft. capacity unit, should be ready for gas-making by October, 1952, and the second part should be completed by April, 1953. Such a major project will greatly improve working conditions as well as meet an increasing demand for gas.

At the conclusion of the inspection, the members of the Board met the Branch Secretary of the Municipal and General Workers' Union, the Shop Steward of the Building Trades and the Chairman and Secretary of the Canteen Committee, as well as representatives from each shift. They also met the employee having the longest period of service in the works and in addition the holder of the George Medal awarded in 1941 following an enemy attack on the works. The Board will next visit the York undertaking where capital works of development are also under construction.

RESEARCH DEVELOPMENT

The President of the Board of Trade, in accordance with the National Research Development Corporation Regulations 1949, has appointed the following as members of the Corporation, which has been set up with effect from June 28: Sir Percy Mills, K.B.E. (Chairman); the Earl of Halsbury, F.R.I.C., F.INST.P. (Managing Director); Professor P. M. S. Blackett, F.R.S., M.A., Sir John McLean Duncanson; Sir Edward H. Hodgson, K.B.E., C.B.; Mr. W. E. P. Johnson, A.F.C., C.P.A., A.F.R.AE.S.; and Sir Edward de Stein.

The functions of the Corporation are (a) to secure, where the public interest so requires, the development or exploitation of inventions resulting from public research and of any other invention as to which it appears to the Corporation that it is not being developed or exploited or sufficiently developed or exploited; and (b) to acquire, hold, dispose of and grant rights (whether gratuitously or for consideration) in connection with inventions resulting from public research and, where the public interest so requires, in connection with inventions resulting from other sources.

The expression 'invention' includes any new process of new technique and is to be construed without regard to whether or not a patent has been or could be granted, and the expression 'public research' means research carried out by a Government Department or other public body or any other research in respect of which financial assistance is provided out of public funds. The Corporation is thus empowered to develop and exploit inventions over which the Government have the right of proprietor (*e.g.*, inventions in the possession of Government Departments), and also those inventions emanating from private sources which are likely to be of benefit to the community and are not being adequately used already.

For its purpose, the Corporation may borrow up to £5 mill. from the Treasury within five years of its establishment, but it is expected to repay any such loans, and to pay its way in the long run.

The Corporation has yet to appoint its staff and it may be some time before it is ready to get into full operation and deal with any great volume of work. Correspondence should meanwhile be addressed to the National Research Development Corporation, I.C. House, Millbank, London, S.W.1. (Telephone Whitehall 5140).

Sir Percy Mills is Managing Director of W. & T. Avery Ltd. He was Controller-General of Machine Tools from 1940 to 1944 and head of the Production Division, Ministry of Production, from 1943 to 1944. From 1944 to 1946 he was President of the Economic Sub-Commission of British Element of Control Commission for Germany, he is a Vice-President of the Association of British Chambers of Commerce, and was President of the Birmingham Chamber of Commerce from 1947 to 1948. He is appointed part-time Chairman for two years, and is serving without remuneration.

Sir John Duncanson was Director of Heavy Steel Products and Deputy Controller of Iron and Steel from 1939 to 1942 and Controller of Iron and Steel from 1942 to 1945. Also, he was a Director of the British Iron and Steel Federation until 1948, and a representative on the Grand Council of the Federation of British Industries. Mr. Johnson is a Chartered Patent Agent and Managing Director of Power Jets (Research and Development), Ltd. Sir Edward de Stein was a Director of Finance (Raw Materials), Ministry of Supply, from 1941 to 1946.

SURVEY COMMITTEES IN THE NORTH WEST

The North Western Gas Board has set up 17 regional committees to examine the accounts, working results, and techniques of the undertakings in the area and to conduct surveys of production capacity and potential demand.

These committees, appointed from the managers and senior officials of the undertakings concerned, have been established as a provisional measure to replace municipal gas committees and company boards of directors until permanent administrative groupings of the 103 undertakings in the area have been decided. They will meet monthly under the chairmanship of a member or senior official of the Board.

Grouping of the undertakings for administrative and management purposes will require further investigation and survey, it is officially stated, and it is likely to be some time before the final grouping of the gas industry in the area is announced.

PERTH DEVELOPMENT PLAN

Mr. W. Nicol Baird, Engineer and Manager at Perth, has been authorised by the Scottish Gas Board to proceed with a £90,000 development scheme to take gas from Scone to Balbeggie, Burrelton, Woodside, Rosemount, Coupar Angus, and Blairgowrie.

This is the first step in the formation of a Perthshire gas grid, and is the first major distribution development tackled by the Scottish Gas Board since its inception. The scheme, which will result in the output of gas being increased from 800 mill. to 900 mill. cu.ft., is expected to be in operation by next winter.

In addition, the Scottish Gas Board has authorised the expenditure of over £140,000 at Friarton gasworks, Perth, for the provision of a new retort house. This will result in a 50% increase in output in addition to the 40% increase which is expected to follow the erection of a carburetted water gas plant authorised by Perth Town Council a year ago. It will be at least two years, however, before these two schemes are in operation.

VISCOUNT HYNDLEY AND THE N.U.M.

The work of the National Coal Board and the national need for increased coal production were the main features of an address which Viscount Hyndley, Chairman of the N.C.B., presented on July 6 at the annual meeting of the National Union of Mineworkers. Referring to the small financial surplus in the industry's second year under public ownership, Viscount Hyndley said that although it was encouraging, they would have had another deficit had it not been that the world price for coal had enabled them to export profitably. He reminded the conference that 'we are still in the red to the extent of £22½ mill.' He believed that it was not beyond their capacity to wipe this out inside a year from now, but the only way to do the job would be to increase production and cut down costs. Speaking of the allied problem of wage increases, he said that he must make it clear that no revision of the wages structure which increased wage costs could be acceptable in present circumstances. The industry could not stand it.

On the question of criticisms of the Board's organisation, Viscount Hyndley said that he would ask intending critics to be sure that their facts were right, that they had appreciated the problems faced by the Board, and the principles adopted by the Board in dealing with them. The Board, he said, was doing many things to make coal mining an efficient service and a job in which there could be interest and a sense of fulfilment. He claimed: 'We are developing scientific methods; we are grappling with dust diseases; we are carrying out ambitious programmes of training and education. Last year the number of deaths through accidents in the mines was the smallest on record. Who is there who would wish to turn our backs on it?'

The South East Regional Hospital Board for Scotland was told on June 7 why Edinburgh Corporation had allowed the Scottish Gas Board to use for office accommodation property which had already been refused to the Hospital Board. The Hospital Board had been informed that the property concerned, at 6, Randolph Crescent, was situated in an area recommended for residential use only, and the Corporation's Housing Committee had resolved that the property should be wholly retained for housing purposes. It was intimated at the meeting that the Housing Committee had been impressed by certain circumstances to which its special attention had been drawn and, in particular, to the fact that the Gas Board were likely to have to function on the appointed day without premises while the Hospital Board had already had office accommodation, although it was considered insufficient. Consent to the change of use of the premises had been restricted to five years.

DISPOSAL OF GASWORKS EFFLUENTS

LARGE SCALE WORK CALLED FOR

IN view of the passing of the River Boards Act of 1948 and the nationalisation of the gas industry, the Institute of Sewage Purification has issued a memorandum on the disposal of gasworks effluents.

The memorandum, which is in the nature of an interim report, points out that in the untreated staet gas liquors are not fit to be discharged into streams or estuaries, since the phenols they contain or, in the case of coke oven waste water, the cyanides present, are directly poisonous to fish. These compounds and the sulphides present are also objectionable because they quickly deprive the water of the dissolved oxygen on which fish have to depend.

No practicable way has yet been discovered of purifying gas liquor by itself. The only feasible method is to pass the liquor into the public sewers so that it can be treated with the sewage at a sewage purification works. All possible steps should be taken to exclude ammoniacal liquor, on account of its objectionable properties in the sewer and at the sewage works.

The acceptance of gas liquor should be subject to the following conditions:—

1. The area of gas supply is no greater than the district draining to the sewage works and there are no abnormally large demands for gas for industrial purposes.

2. Whenever possible the liquor discharged is the spent liquor, not the crude ammoniacal liquor: the spent liquor is claimed to be less resistant to the processes of purification used at sewage works.

3. The flow of gas liquor to the sewer *is continuous* in order to keep alive at the sewage purification works those bacteria able to destroy the compounds in gas liquor which are absent from sewage. In some cases it may be preferable to vary the flow so that the maximum amount of liquor is received into the sewers when the flow of sewage is at its peak.

4. Gas tar is completely absent from the gas liquor. Gas tar is likely to pass through the sewage works and cause damage at every stage of treatment, especially in bacterial filters and in activated sludge plants. The tar should therefore be rigidly excluded. Gas liquor should not be stored in the presence of tar, for the reason that some of the tar constituents are extracted by the liquor.

In view of the greater ease with which spent liquor is purified, the aim of all gas undertakings should be to avoid the discharge of crude gas liquor. Sewage purification is an expensive process and it is wrong that public money should be spent in destroying at the sewage works valuable substances that could be taken out of the liquor at the gas works.

In making payment to the local authority for the treatment of the gas liquor, the gas industry is on a par with many other industries. Some gasworks pay on the volume of liquor produced, some on the tonnage of coal carbonised, some pay a fixed annual charge, while others claim a prescriptive right to discharge the liquor without payment.

It is desirable that there should be greater uniformity in the method upon which charges are based, although absolute uniformity is impracticable. This lack of uniformity is mainly due to inadequate information regarding the effect of the different constituents of gas liquor on sewage purification, varying standards of purity required of sewage effluence, and to the differing attitudes of local authorities towards the question of payment.

Large-scale work on the purification of gas liquor is needed so as to determine the amount of plant required for the purpose. Such information will prove whether the charges now made are excessive or not, which of the constituents of gas liquor it is most desirable to remove, and the magnitude of the rebate which could be offered in order to encourage the removal of such constituents.

INSTITUTE OF WELDING

LAST YEAR'S INCREASE IN MEMBERSHIP

THE report presented to the 26th annual meeting of the Institute of Welding on July 13 recorded that there had been an increase of membership for the first time since 1946. During the year the Council approved the establishment of a new class of Companions, who will ultimately replace the present Companion Members. The total membership on Mar. 31 was 4,818, an increase of 187 over the previous year's total.

The growth of the branches, both in activity and in number, continued during the year, when Council recognition was accorded to a new section at Hull, under the Leeds branch, and to the first Overseas Branch, in India. Before the end of the year enquiries were received with a view to the formation of a section of the South London Branch to serve the Medway area, and plans were drawn up for the coming session. Standard branch rules were amended in order to remove certain obscurities of wording.

The Institute continued to play its part in the International Institute of Welding, established at Brussels in June, 1948. Mr. G. Parsloe, the Secretary of the Institute, was elected the first Secretary-General of the International body and accepted the honour with the approval of the Council, so that the administration of the International Institute has, in effect, devolved upon the headquarters staff of the Institute. The Institute also provides a meeting place and a secretariat for the Joint Committee set up by the five British Member Societies of the International Institute, to ensure appropriate British representation in international undertakings.

The Council has accepted a sum of £250, given by Mr. C. W. Hill, a Past-President, for the furtherance of welding education, especially among draughtsmen. It is intended to apply the income for an annual prize to be known as the C. W. Hill Prize, and regulations for the award have been approved.

Thanks to the generosity of Mr. J. L. Adam, President in the preceding year, the Institute received a Grant of Arms from the Earl Marshal on June 7, 1948.

The Library was more used in 1948/49 than in the previous year; 531 borrowers were lent 1,065 publications and 40 slides, figures which compare with 474, 909 and 149 in 1947/48. Enquiries by telephone or post involving some search of records and the writing of a letter numbered 524, as against 481 in the previous year. In October the Council appointed a full-time Information Officer, in the person of Mr. H. W. R. Perkins, B.A., previously Assistant to the Secretary for general administration. It is hoped that this new appointment will lead to a steady development of the Information Service, to which the Council attaches great importance.

The Sir William J. Larke Medal was not awarded in 1948, but new regulations for the competition were approved, and come into force in 1949. Regulations were also approved for the award of the B.O.C. Welding Prize for gas welding papers. This competition will be held for the first time in 1949.

The examinations for Associate-Membership were held twice, in July, 1948, and January, 1949. As a consequence the regulations regarding theses were revised, so that the thesis becomes an alternative to the examination. After April 1, 1950, this alternative will be open only to candidates over the age of 35.

The Committee continued to ensure the representation of the Institute on all appropriate bodies, such as the Technical Committees of the British Standards Institution, and to supply comments on draft Standards and Codes of Practice. A competition for the design of a workpiece was held during the year and the prize was awarded to Mr. R. A. Iddon. A further competition in welding craftsmanship was held, the results of which are not yet available. The report of the Presidential Committee on economy of steel and cast iron by welding, completed last summer, was made available to the Steel Economy Sub-Committee of the Cabinet Materials Committee.

Leave and Pay Arrangements for gas industry employees wishing to attend Territorial Army camps were the subject of a question in the Commons recently. Major Tufton Beamish, M.P. for Lewes, asked the Minister of Fuel and Power if he was aware that the Gas Council had not yet made any decision in this matter, what was the cause of the lack of decision, and when an announcement could be expected. Mr. A. Robens, Parliamentary Secretary to the Ministry, replied that the Gas Council, owing to the short time which had elapsed since vesting day, had not been able to unify the varying practices of the gas undertakings before nationalisation. The matter had, therefore, been left to the area Boards to determine locally, but the Gas Council had asked the Boards to deal sympathetically with applications. In reply to a further question from Major Tufton Beamish, Mr. Robens said that there would be a unified policy within the areas of different Gas Boards this year. It was intended to formulate a national policy for next year.

SOUTHAMPTON RE-VISITED AFTER 16 YEARS

NONAGENARIAN AMONG THE 'CHILDREN'

BY invitation of the Directors of the former Southampton Gaslight and Coke Company, members, ladies, and guests of the London and Southern Junior Gas Association to the number of over 150 visited Southampton for the Summer Meeting and Ladies' Day. During the sunny morning the Southampton gasworks—where the visitors were welcomed by Mr. S. E. Whitehead, Deputy Chairman and Managing Director of the former Company and Deputy Chairman of the Southern Gas Board—were open for inspection by courtesy of the Southern Gas Board.

The Association last visited Southampton in 1933, and on the present occasion members were reminded that the quantity of gas sold had trebled in the last 30 years and more than doubled since 1930. Evacuation and the destruction of property by enemy action caused a sharp fall in gas sales and number of consumers during the war, but the decrease was soon more than made up by the increased use of gas for industrial purposes and in canteens. Developments on the works since the previous visit include the addition of two installations of static vertical retorts, 20 retorts in each, by the Woodall-Duckham Company. The first was put to work in 1939 and was the first commercial plant of this type in the country. Provision was made for the later extension of the plant, and this was carried out by the erection of the second section which went to work at the beginning of 1948.

Latest Extensions

One of the latest extensions has been the provision on a new site of a water gas plant by the Power Gas Corporation, comprising two 2½ mill. cu.ft. per day sets fitted with mechanical grates, automatic hydraulic operation, waste heat boilers, electrostatic detarrer, and overhead coke bunkers fed by a skip hoist. This plant was put to work in March of this year, and provision has been made for a further set. Also since the previous visit, new central offices and showrooms have been erected. The offices suffered minor damage during the war, but the showroom block was completely destroyed, and the position today is that the showroom is accommodated in one of three temporary shops built on the site of the 1939 building, while the offices are being extended to meet the needs of the Southern Gas Board.

After the inspection of the works, the party was entertained to luncheon at the Royal Pier Pavilion, where Brigadier E. M. Jack, C.B., C.M.G., D.S.O., D.L., Chairman of the former Southampton Gaslight and Coke Company, presided.

Proposing the toast of the London and Southern Junior Gas Association, **Brigadier Jack** said he knew something of the Association and of the useful work it did. He was glad to know that its membership included a number of the staff of the former Southampton Company. Formed in 1902 it had 625 members and was the largest and with one exception the oldest of the Junior Associations. The word 'junior' was puzzling to many outside the Association, including those who, when the arrangements were being made for that function, enquired how many children were expected to attend. He was pleased to welcome among the 'juniors' Captain W. J. Liberty, one of the earliest members of the Association, who was about to celebrate his 90th birthday.

In the Front Line

It was 16 years since the Association last visited Southampton, and in that time a great deal had happened. Their output had increased by over 100%, a good deal of new plant had been erected, and they had had six years of war, in which they were more or less in the front line, and of which they still felt the effects. The greatest change of all had been the nationalisation of the industry. Of that he would only say that he hoped and believed that the change would not affect in any way the work of the Association, and that under the new régime they would continue to carry on their activities with the same benefit as in the past to themselves and to the gas industry.

Mr. **L. J. Clark,** B.E.M., M.SC., A.M.I.C.E., President, in replying to the toast, said the members of the Association were proud of their 47 years' tradition. They were indebted to the Directors and officials of the former gas companies and the administrators of the new Gas Boards for all the support and help and encouragement they had given them in the past, and they were grateful to the Directors of the former Southampton Company for their present hospitality, and to the Southern Gas Board for their courtesy in granting facilities for visiting the Southampton works.

Mr. **T. V. Garrud,** Vice-President of the Association, proposed the toast of 'The Old Company and the New Gas Board.' He recalled that the Southampton undertaking was founded 130 years ago and the Company officially celebrated its centenary in 1948. In coupling with the toast the name of Mr. Whitehead, he congratulated him on his appointment as Deputy Chairman of the Southern Gas Board.

Mr. **S. E. Whitehead,** B.SC., M.I.C.E., J.P., Managing Director of the former Company, and Deputy Chairman of the Southern Gas Board, said they were proud of the Company's long record and he was confident that they were going to continue to carry out their jobs with the same enthusiasm as before. In apologising for the absence of Mr. O. R. Guard, Chairman of the Board, he said they all felt very fortunate in his appointment. He was full of energy and an expert in finance and organisation, and under his leadership they were going ahead very strongly. They believed strongly in the greatest possible measure of decentralisation, and they wanted the local man to remain the 'gas boss' in his own town. He was confident that the prospects for the younger men would be brighter than under the old régime, and he hoped that nothing in nationalisation would reduce the activities of the Junior Associations.

Mr. **G. Neil,** M.INST.GAS E., Engineer, briefly proposed the toast of the Chairman, and Brigadier Jack suitably replied.

After luncheon the party embarked for a two-hour cruise round Southampton Water and the Docks in ideal summer weather. The cruise included a close-up view of the *Queen Mary*, which had docked the previous day. Tea was served on board, and the trip ended early enough for the visitors to enjoy informal rambles round the places of interest in Southampton.

RUGBY WORKS VISIT

The Midland Branch of the Institution of Mechanical Engineers recently visited the Rugby works of the British Thomson-Houston Co., Ltd., when about 150 members toured some of the factories devoted to the manufacture of heavier plant. The departments visited included the turbine factory, which is equipped for the manufacture of large turbo-generators for steam pressures up to 1,200 lb. per sq. in., temperatures up to 1,000°F., and voltages up to 33,000, the gear factory, one of the most modern of its type, the transformer and generator factories, the new heavy plant building, the fabrication factory, and the foundry. The visitors were impressed by the expansion programme laid down for the fabrication factory and saw the construction being carried out on two new bays which will more than double the factory's manufacturing area. Of interest also was the unusual lay-out of the foundry. Designed as a three-storey building, the ground floor is devoted to machine moulding, and operates on the roller conveyor principle for the production of castings for the smaller sizes of motors and domestic appliances. The higher floors produce iron castings up to 10 cwt. and castings in non-ferrous metals.

OLDHAM CENTENARY

In connection with Oldham's Centenary celebrations, an interesting industrial exhibition was held for eight days in the Drill Hall, and on 40 stands were to be seen many of the local trades' activities and products. The Industrial Section of the Oldham gas undertaking staged an attractive display covering heat treatment, industrial drying, steam raising, incineration, bulk water heating, central heating, and baking oven equipment.

An added attraction was the live demonstration of a patent control arrangement for gas-fired bakers' ovens, where thermostat action and flame failure safety cut-offs were continuously demonstrated. A further feature on the central heating exhibit was an ingenious model, designed and built by members of the industrial staff, contrived to show the flow of water from the boiler round a system of pipes and radiators and through a coil in a model storage cylinder, with secondary hot water supply to basins.

Organised parties of school children visited the exhibition each morning, and the hall was open to the public in the afternoon and evening. Technical staff were kept busy with many enquiries, and the official attendance, excluding school parties, was 21,600 for the week.

Following a Meeting with Mr. F. J. Fischer, Director of Usogas, Zurich, in London for the 4th International Gas Conference, Mrs. W. M. Buchanan, Organising Secretary of the Women's Gas Council, visited Zurich in the last week of June to address a meeting of representatives of women's organisations interested in the work of the Women's Gas Council for Switzerland.

DEVELOPMENT PLAN FOR THE NORTH EAST

DETAILS of a reconstruction plan for North East England, prepared by Sir George Pepler and Mr. P. W. Macfarlane for the Ministry of Town and Country Planning, were published last week. The scheme proposes an expenditure of nearly £500 mill., which it is estimated local authorities would normally spend in the next 35 to 40 years, and covers in the main the area served by the Northern Gas Board, whose headquarters are at Newcastle. The principal recommendations concern a distribution of population based primarily upon convenient access to industrial opportunity and the necessity for gradually relieving the present congestion of population and providing better surroundings for homes, work, and recreation.

The proposals for new housing include the expansion of a number of selected places and the creation of several big new settlements. The consultants advocate, for example, the establishment of 'quasi-new towns' at Holywell and Barlow with populations of 41,000 and 50,980, resulting mainly from the reconstruction of grossly overcrowded areas on Tyneside, increasing the populations of Redcar to 46,800, and of Guisborough to 23,400, the creation of a third new town for County Durham at Brandon with a population of 22,400, and an increase of 13,000 in the figure at present proposed for the population of Aycliffe.

Particular attention is devoted to probable developments in the Northumberland and Durham coalfields. As subsidence makes the surface unsafe for building, surface and underground planning must be concurrent. In areas of stable mining, where little diminution of employment is anticipated in the near future—for instance, in East Durham and South-East Northumberland—the consultants recommend that new industries should on the whole be restricted to those mainly employing female labour.

For people in areas where mining will, over a period of years, provide less employment than at present, the setting up of new industries is recommended either in the mining areas themselves or in such a way as to effect a gradual transference of population. Industrial expansion is, for instance, recommended at the Team Valley Trading Estate, Stanners, Newburn Haugh, Langley Moor, Aycliffe, and to a limited extent on Tyneside. One of the most important of the industrial proposals, apart from those directly concerned with coalfields, is for a comprehensive survey and scheme for redeveloping the south bank of the Tyne.

Other proposals include the introduction of new industries into Sunderland to reduce the domination of the town's economy by shipbuilding; the widening of the River Wear, and the provision of accommodation on Teesside for an additional 51,000 persons to meet the demands for an expansion of the labour force.

A comprehensive agricultural policy is recommended, one effect of which would be to end the present rivalry between sheep farming and afforestation for the use of uplands. The provision of regional parks and nature reserves at Mitford and in the lower Derwent Valley, and the development of holiday resorts such as Whitley Bay and Seaton Carew, are also advocated.

PUBLICATIONS RECEIVED

The Directory of British Rubber Manufacturers and Products, issued by the Federation of British Rubber Manufacturers' Associtaion, 43, Bedford Square, London, W.C.1, is the first publication to give a complete picture of the British rubber industry. In its 300 pages, it covers nearly 100% of all British manufacturers of rubber products, and comprises an index of manufacturers, an index of products, a special section for tyre manufacturers, and list of trade marks and trade names. The Directory is excellently produced in colour, and printed throughout in English, French, and Spanish. Although designed primarily for the overseas market, it will be of considerable interest to buyers of rubber products in this country. A limited number of copies are available from the Federation's offices, price 25s., post free.

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Mr. W. Wakefield Adam, who for many years has had the interests of fuel economy and coal conservation at heart, has published a booklet entitled *National Recovery and Prosperity by the Better Use of Coal*. The object of the booklet is outlined in a foreword as being 'to show that by reducing the colossal waste of coal and by treating coal as a valuable mineral product, the workable reserves may last for a much longer period and at the same time Britain can derive great wealth from coal utilisation.' A five-point plan to secure this object is presented, covering railway electrification, full use of hydro-electrical power, modernisation of the steel industry, and the dometic use of smokeless fuel. The publication can be obtained from the author at King's Court, 48, Broadway, London, S.W.1, price 7d., post free.

* * *

Fifty years of boiler manufacture are recorded pictorially in an anniversary booklet compiled by Cochran and Co., Annan, Ltd., Newbie Works, Annan. The history of the company is traced from early days when the directors of Cochran and Co., in Birkenhead, moved to a new site in Annan, and registered a new company under its present name in 1898. Until 1901 shipbuilding proceeded alongside boilermaking, but in that year the shipyard was closed down and the Company's attention was henceforward concentrated on the manufacture of the now famous Cochran boilers. Two more prominent events in the firm's history are mentioned—the formation of a subsidiary, Ruths Accumulators (Cochran), Ltd., in 1928, and the manufacture of horizontal waste heat boilers for gasworks and steelworks use in 1934

REVISED BRITISH STANDARD FOR AIR RECEIVERS

The British Standard for fusion welded steel air receivers (B.S.487:1949) has been extensively revised and applies to pressures up to 500 lb./sq. in. One important amendment is that the term 'design pressure' is used throughout, not operative or working pressure. Design pressure is defined as the highest pressure to which any safety or relief valve is to be set to lift and it is desirable that there should be a margin between the working pressure and the lowest pressure to which the safety valve is set. Three new clauses have been added; five clauses differ substantially, and four clauses have been modified by comparison with the 1939 edition.

Possibly the amendment which will make the most difference both to makers and users is the series of constants affecting the thickness of the shell plate, which place a premium on heat treatment and weld tests. There are now six constants in place of two. In certain cases of reinforcement (compensation to openings) a tell-tale hole has been specified to ensure that any crack or imperfection in an inner weld does not build up pressure or cause undetected corrosion. New illustrations to the present edition include large scale typical butt welds and butt weld with backing strip; several of the previous illustrations have been modified and the notes to the figures are more informative.

Copies of this standard may be obtained from the British Standards Institution, Sales Department, 24, Victoria Street, London, S.W.1, price 3s., post free.

LOCAL GOVERNMENT CAREERS

Intended primarily for young men and women seeking a satisfying career, *Careers in Local Government and Allied Services*, by J. B. Swinden, published by the National Association of Local Government Officers, at 7s. 6d., tells them how to find, keep, and enjoy a job in local government and in the health, utility, and similar public services. The author was formerly Deputy General Secretary of Nalgo, an expert with a lifetime's experience of the local government and allied services. The book describes in detail more than 50 professions, indicating the kind of work performed, method of entry, qualifications required and how they may be obtained, and the salaries paid, conditions of service, and prospects of promotion. There is a special chapter by Miss M. L. Kellmer, a child guidance psychologist, to show the applicant how he may assess his own aptitudes and select the post for which he is best fitted. The book should also be of value to parents, teachers, chief officers, librarians, and councillors, and all who are called upon to give advice in the choice of a career. Although gas and electricity have passed out of the hands of local authorities, Nalgo still caters for those engaged in those industries, and details are given of the careers available in both spheres.

We understand that the Naples Gas Lighting and Heating Company has placed a contract with the General Descaling Co., Ltd., of Sheffield, for the cleaning, by their patent process, of 56 kilometres of 125mm. to 750mm. gas mains.

TRADE NEWS

We have received from **S. Wolf & Company, Ltd.,** Pioneer Works, Hanger Lane, London, W.5, details of a portable electric hammer for boring brickwork and concrete preparatory to plugging or for insertion of conduit up to $\frac{7}{16}$ in. diameter. Features of the machine are its light weight (7 lb.), high speed of penetration, and a telescopic dust-proof spring steel cover fitted to the tool-holder. Detailed lists are obtainable from the manufacturers.

* * *

A revised issue of 'Fan Engineering Equipment,' first published in 1947, has been received from **Keith Blackman, Ltd.,** Mill Mead Road, London, N.17. Their equipment and industrial gas systems are fully described and illustrated in this 24-page booklet, which includes a page of excellent photographs of the Company's works at Tottenham and Arbroath. In addition to a comprehensive list of products, including propeller, axial, and centrifugal fans, air heaters, washers, and filters, there is a special section of particular interest under a general heading of industrial gas equipment. This describes compressors, governors, mixture controllers, &c., gas boosting fans, injectors, burners, nozzles, soldering irons, and blowpipes.

* * *

Holden and Brooks, Ltd., have augmented their range of centrifugal pumps by the introduction this month of what is described as a modern 'streamlined' silent Super Selfix Mark V circulator for low pressure hot water heating and domestic systems. The model is described in an attractive leaflet, available from either their head office at Sirius Works, Manchester, 12, or from the London offices, 66, Victoria Street, S.W.1. Innovations and refinements incorporated in this pump include a mechanical gland seal, ensuring freedom from leakage and trouble-free operation for long periods; a transparent plastic belt guard, which is non-resonant and affords complete protection of the drive; and a simple hand-wheel operation of the screw down valves, principally for isolation but also allowing for capacity control if required. The leaflet also contains an index of parts, a general specification, and a list of capacities for different pump sizes.

* * *

Colvilles, Ltd., of Motherwell and Glasgow, steel manufacturers, report an outstanding advance in the finishing field. An essential feature of the new process developed by the Metal Gas Company, Ltd., Motherwell, and known as 'Chromising,' is that it gives stainless steel surface finishing and performance at a fraction of the price required in an article fabricated of stainless steel throughout. Results are achieved by means of a chemical reaction which takes place at high temperatures on the surface of articles of ordinary steel, removing atoms of iron and replacing them with atoms of chromium. The chromium then penetrates into the steel to a depth of several thousandths of an inch to form a coating of stainless steel containing 30% of chromium covering every part of the surface and protecting it from rust and corrosion. The stainless properties are only at the surface where they are needed, so that the total amount of chromium used is only a fraction of that required to make the article from solid stainless steel. This change takes place without altering the dimensions of the article.

* * *

Materials for water treatment and water softening are the subject of four technical publications which have been revised recently and issued by the manufacturers, **Joseph Crosfield and Sons, Ltd.,** Chemical Department, Warrington. Publication No. 22 gives general information about the characteristics and methods of application of 'Soucol,' which is a cation exchange material of the carbonaceous type, particularly suitable for the treatment of water with a high concentration of carbon dioxide. The material can be used in industrial plants, for treating public water supplies, and in certain cases in domestic water softeners. Nos. 23 and 24 summarise the information regarding the chemical and physical properties of 'Doucil' in text and accompanying graphs; No. 23 also contains diagrams of the main types of water softening units. 'Doucil' is a synthetic sodium-aluminosilicate, which provides a simple and clean method of removing hardness from domestic water. No. 25 contains a full description of the Lime and 'Soucol' process for pretreating natural waters for boiler feed purposes.

* * *

Technical publication No. 22, published by **Fry's Metal Foundries, Ltd.,** Tandem Works, Merton Abbey, London, S.W.19, gives details of 'Fryolux' soldering paint, which, it is claimed, provides a new approach to tinning and soldering and the possibility of considerable economies in time and material. For tinning, the article is brushed or sprayed with the paint, which is applied cold and heated until the solder melts to form an adherent coating; for soldering, the joint members are coated prior to assembly, and are then sweated together. The booklet describes the material's many uses and indicates those fields in which it is most suitable. The paint, which enables solder and flux to be applied together, is available in different grades, according to type of work required, and illustrations are provided of a variety of articles in which the product is used.

* * *

The **Duoflam Reference Book, No. 37,** just published by Radiant Heating, Ltd., describes in 108 pages the principle of the Duoflam burner, the result of nearly 30 years' progressive research, and offers a good deal of useful advice on the efficient use of the burner, the conversion of solid fuel fired boilers to gas firing, and describes a wide range of industrial and domestic purposes to which this special type of burner has been successfully applied. Satisfied with the success of the burner when properly installed and used, the manufacturers are anxious that they should not be used for applications for which they are not suitable. They are not recommended for high temperature metal melting or heat treatment operations, nor for the conversion of Cornish, Lancashire, or other types of boilers having long horizontal tubular fireboxes. The book sets out 12 main advantages of the burner and recommends its application to sectional and vertical steam and hot water boilers, fish frying ranges, sugar boilers, air heaters, blacking and similar ovens and stoves, sterilisers, bakers' ovens, lead and other low temperature metal melting pots, washing and degreasing vats, milk boilers, double oven ranges for canteens and feeding centres, &c. In short it is claimed that if a bunsen burner is needed, a Duoflam will do the job effectively.

COMPANY NEWS

Cape Town

After providing for interest on debentures, loans, &c., the accounts of the Cape Town and District Gas Light and Coke Company for the year ended Dec. 31, 1948, show a profit of £23,851. Adding to this the amount brought in from previous accounts and a sum transferred from taxation provisions no longer required gives a total of £50,091. Funding certificates interest and preference stock dividend, less tax, have been paid and after allocating the necessary provisions an ordinary dividend of 5% leaves a balance of £7,552 to be carried forward. The circulated statement of the Chairman, Sir George Barstow, records that a substantial transfer has been made to the provision for plant renewals. Notwithstanding the progress made in re-equipping production and distribution plant a considerable shortage remains to be dealt with as soon as circumstances permit, but though working to capacity the Company has so far averted any necessity to ration gas to its consumers. It is expected that a new gasholder will be working before the end of the current year. Difficulties in regard to the installation of capital works and plant have not lessened. Costs have risen steeply and contractors are not in a position to accept contracts except under long-delayed delivery dates. It is fortunate that some plant contracts had been placed in advance, otherwise output of gas must have fallen far short of demand, and the results achieved during the year would have been less satisfactory.

Whessoe, Ltd.

In his statement circulated with the report and accounts the Chairman says: In response to the heavy demands we were able to produce a record amount of oil storage tanks and refinery equipment. Outstanding progress has also been made in the design and construction of plant for the gas industry, while thanks to the Company's achievements in welding, it has secured a number of valuable contracts involving advanced engineering techniques; these include supersonic wind tunnels and vessels for catalytic cracking plants. Contracts have been carried out for the Argentine, India and other overseas markets. In Venezuela, the Company has continued to carry out a large programme of oil storage work. The volume of orders on our books indicates that the works will be fully occupied for a considerable time to come.

Following the completion of the extension of the works, the Cona Coffee Machine Co. has transferred its head office and showroom from 50, Park Street, London, W.1, to Felden Works, Railway Place, Wimbledon, London, S.W.19 (Telephone Liberty 7277/9).

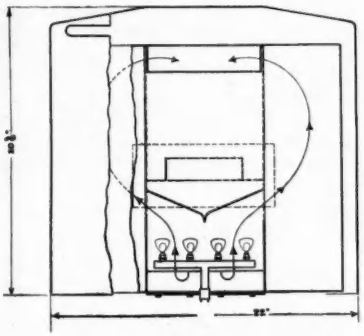
THE BALANCED FLUE HEATER

AN INTERESTING SPACE HEATING DEVELOPMENT

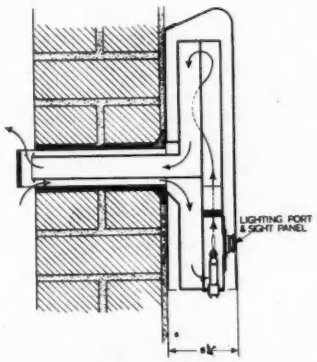
The New Balanced Heater is unobtrusive

The development of the balanced flue heater is an outstanding achievement, and its introduction is sure to aid the use of gas for space heating.

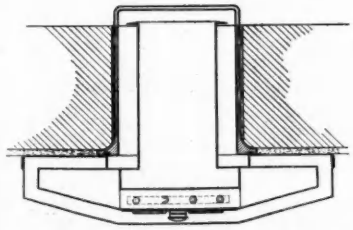
With the balanced flue heater all the combustion products are discharged directly to the open air without the need of a chimney. High efficiencies are obtainable, and there is no limit to the size of the heater. The air for combustion is also drawn directly from outside so that the air inside the room is unaffected. Since the flow of air and products is automatically adjusted, the same efficiency is maintained at all gas rates. The flow of gas may therefore be adjusted to suit the requirements of the room without in any way interfering with the performance of the heater.



FRONT SECTIONAL ELEVATION



SIDE SECTIONAL ELEVATION



SECTIONAL PLAN

BALANCED FLUE HEATER WITH ASBESTOS AIR DUCT

DIAGRAM SHOWING PRINCIPLES OF OPERATION

The 'Sapphire' balanced flue heater is the commercial production of the heater developed in the laboratories of the South Metropolitan Gas Company.

Construction and Appearance

The appliance is constructed of sheet aluminium, the heater body being shallow from front to back. The space within is made up of four vertical compartments, one at each side, and two, one behind the other, at the centre. The rear centre compartment is closed at the sides and divided horizontally into two parts, the lower portion forming a duct for the entry of air for combustion, while the upper portion forms another duct for the passage of combustion products to the flue.

The front centre compartment is open at the sides for approximately two-thirds of the height, being closed towards the bottom. In the lower portion with the closed sides is fitted a horizontal burner with four Bray jets. Above the burner and in the portion of the compartment with open sides is a deflector plate of flattened 'V' form. There are thus six compartments in the heater body, one for admission of air to the combustion chamber, the combustion chamber itself, two side and one front circulatory chambers for the products of combustion, and one compartment for the passage of products of combustion to the flue.

At the back of the heater and communicating with the vertical products flue is a horizontal flue, telescopic and of a minimum length of just over 9 in. This flue, rectangular in cross-section, is made of stainless steel, and operates in the centre of a wall terminal, constructed of asbestos cement, and of cross-sectional area equivalent to the size of a standard building brick, which it replaces when the heater is installed.

An outer casing covers the heater body, except for the base, which is open for the admission of cold air from the room, three wide slots being provided at the top front for the discharge of heated air into the room. The heater body is centrally disposed inside the outer casing, so that room air is able to circulate all round the former before being discharged through the slots.

A patent triplex tap, operating at half, three-quarters and full gas rate is provided, together with a permanent pilot jet. The lighting aperture near the base of the heater body is covered with a screwed cap,

Air for combustion passes through the opening between the wall terminal and the horizontal products flue to the centre back lower compartment of the heater body, entering at the top rear and proceeding downwards to an opening at the bottom front which communicates with the combustion chamber housing the burner and pilot jet.

The products of combustion are diverted by the flattened 'V' shaped deflector plate to the side circulatory chambers, and thence to the centre front upper compartment at the top rear of which is an aperture communicating with the vertical products flue. The products pass down this flue to the horizontal flue and so to the open air.

The deflector plate ensures even distribution of the products throughout the side compartments, in which some of the cooled products tend to fall to the base and then to rise again to the centre front upper compartment. The closed sides at the base of the combustion chamber prevent these from interfering with combustion.

Air from the room passes through the space between the outer casing and the heater body at the bottom of the appliance, circulates freely around the heater body, and is discharged into the room through the slots at the front top of the outer casing.

It should be emphasised that the heater body is completely sealed from the room in which it is placed, air for combustion entering from the outside and the products being voided without any possibility of their entering the room. High winds cannot extinguish the flames or interfere with the combustion, their only effect being to reduce slightly the efficiency of the appliance, which equals 80% in still air, reduced to 75% with winds of a velocity up to 10 miles per hour.

Flexibility and Adaptability

The provision of a patent triplex tap with three positions for full, three-quarters, and half gas rates, increases the usefulness of the 'Sapphire' balanced flue heater.

Heat outputs ranging from 2,000, 3,000 to 4,000 B.Th.U. per hour are obtainable with the gas consumptions of 2,500, 3,750 and 5,000 B.Th.U. per hour. In combination with a portable gas heater of the 'Warwick' type, the heat outputs are raised to 6,500, 7,500, and 8,500 B.Th.U. per hour for gas consumptions of 7,500, 8,750, and 10,000 B.Th.U. per hour. From the data given in the British Standard Code of Practice, CP. 332.301 (1947), 'Space Heating by Means of Independent Gas Appliances,' it may be shown that for a 25° F. temperature increase above outside temperature a room 8 ft. by 8 ft. by 8 ft. will require 3,520 B.Th.U. per hour with typical pre-war buildings, or 2,880 B.Th.U. per hour with the recommended thermal insulation, and these values can be readily attained with the balanced flue heater. For rooms up to 14 ft. by 14 ft. by 8 ft. the balanced flue heater and the 'Warwick' fire provide a good combina-

tion, while for larger rooms, a second balance flue heater could be installed.

To prepare for the installation of the balanced flue heater it is only necessary to remove an outside brick from the wall, continue the hole through the wall, insert the asbestos cement terminal (sawn in half, if the wall has a greater thickness than 9 in., in which case the intervening space between the halves is made up with cement) and arrange the grooved flange flush with the internal rendering and the outlet apertures just clear of the outside of the wall. Four holes are then punched in the inner wall to correspond with the bolt holes in the heater, and rag bolts or screws inserted. The groove in the flange is next filled with jointing material and the heater placed in position, with the horizontal products flue passing through the wall terminal and the four bolt holes engaging with the bolts in the wall.

Nuts are fitted and tightened so that a spigot at the back of the appliance is bedded into the jointing material, thus sealing the unit from the room. The ¼ in. gas connection is next made and the outer cover fitted. Finally the moveable end of the telescopic products flue is pulled outwards until it protrudes just beyond the outer wall. Cowper Penfold and Co., Ltd., the manufacturers, specify its installation for the heating of living rooms, nurseries, bedrooms, bathrooms, and heating of dwelling houses, hospitals, garages, and its application to the space heating of such buildings as schools and shops.

WASTE HEAT RECOVERY

Spencer-Bonecourt, Ltd., London, have in conjunction with West's Gas Improvement Co., Ltd., of Manchester, received an order from the West Midlands Gas Board for the supply of a gas-turbine driven alternator to operate in conjunction with the latest installation of Glover-West continuous vertical retorts on order for Foleshill gasworks at Coventry.

The system comprises a heat-interchanger for the gas turbine circuit, interposed in the waste gas flue. The gases enter the interchanger at approximately 800° C. and are reduced to 475° C. before passing on to a standard Spencer-Bonecourt induced-draught waste heat boiler, where the process steam for the retorts is generated. The gas turbine is an eight-stage machine, will operate on the closed cycle principle, and is being built by John Brown & Co., Ltd., Clydebank. The air from the interchanger enters the turbine at 600° C., which is well within the accepted temperature range for heat-resisting alloys. The air leaves the turbine at approximately 360° C. and passes to a contra-flow type regenerator where it preheats the air from the compressor before entering the main heat-interchanger. The compressor is a five-stage centrifugal type machine of John Brown & Co.'s design, with intercooling between the second and third stages.

The air leaving the regenerator (on the exhaust side of the circuit) is cooled down to approximately 25° C. before it enters the L.P. compressor, in order to keep the compressor efficiency as high as possible, and so reduce the negative work. The alternator is a 700 kW machine and will generate some 600 kW net for disposal, *i.e.*, after allowing for auxiliaries; the overall efficiency of the turbine set—electricity generated compared with heat absorbed from the waste gas circuit—will be of the order of 25%. To this must be added the heat equivalent of the steam generated in the waste heat boiler. As the yield of electricity is well over works requirements, the alternator will feed direct into the Coventry electricity supply mains. A salient feature of this plant is that it is designed to operate well within accepted temperature limits, higher potential recovery efficiency being considered secondary to long-period operation, and each component member of the assembly has been designed with durability and long-period running as the prime objectives. This new system of waste heat recovery by the combination of electricity generated by gas turbine together with process steam for works purposes is covered by Spencer-Bonecourt/Gregson patent.

'WE CAN MAKE IT'

An exhibition was recently held at the Goblin Works, Leatherhead, of the **British Vacuum Cleaner and Engineering Co., Ltd.,** to show the workers, their families and friends the products of the Company and its subsidiaries. The products of the parent factory shown ranged from complete B.V.C. industrial cleaning plants and 65 h.p. exhausters as used in the soot and dust removal plants in the larger power stations, to Magneta electric time recorders. Other displays included Goblin domestic vacuum cleaners, made at the firm's Surrey and Scottish factories, were on view, clocks and the Goblin Teasmade set and radio from the Northern Ireland factory, the new Goblin washing machine, and a wide range of public address equipment.

Display material used was all prepared by the Company's own display department and served in particular to draw attention to the history of vacuum cleaning from the invention of the cleaner to the present wide range of uses.

'AUTOTHERMIC' CRACKING PROCESS

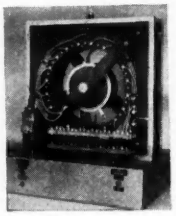
Information has reached us from the Universal Oil Products Company (Bush House, Aldwych, W.C.2) of a new process which is likely to interest the gas industry. This process, which has been named 'autothermic cracking,' provides gas undertakings in America with a convenient and economical means of meeting emergency peak load demands for gas which occur on exceptionally severe winter days. Supplying sufficient gas to meet sudden emergency peak load demands for home heating, and at the same time maintaining interchangeability in burning characteristics in the supplementary gas, is one of the most formidable technological problems confronting gas undertakings in U.S.A.

Autothermic cracking consists in reforming propane, naphtha, natural gasoline, or other volatile hydrocarbons in admixture with air to make supplementary gas approaching the normal sendout in quality. By varying the proportions of air to hydrocarbon, gases of a wide range of calorific value can be produced. The process has potential value for the petrochemical industry also, inasmuch as ethane can be similarly cracked to produce ethylene, the starting material for the production of alcohol, anti-freeze compounds, and many other products.

We are informed that the 'Autothermic' process has been tested and proved in pilot plant operations producing 1,000-2,000 cu.ft. of gas per hour, and thorough burner tests on the gas have been conducted by engineers of large gas undertakings in America.

RUNBAKEN INDUSTRIAL OVEN IGNITER

The apparatus illustrated here is a mains operated protective igniter for gas or oil fired industrial ovens designed to safeguard equipment against explosions which can arise from accumulated pockets of unburnt gas occasioned by temporary extinction of one or more supply jets. Also, materials being heat treated are safeguarded against temperature change wastage. The device functions by virtue of cyclic high voltage discharges across every individual burner. High tension conductors connect the unit to the burners.



This type of igniter comprises four major elements :—

(1) A mains operated power supply unit supplies current at the correct voltage to a rectifier. The transformer for this purpose is of generous proportions with small copper and iron losses and negligible temperature rise.

(2) A selenium rectifier bank for full wave rectified current. This is continuously rated well within power requirements and is adequately ventilated.

(3) A high voltage generator takes the form of the Runbaken oilcoil which, being oil immersed, has unusual insulation and heat dissipating properties.

(4) A motor and stator burner selector which is motor driven at a pre-determined speed and governor controlled. All motor and governor spindles run in ball bearings and will run continuously in a tropical atmosphere. The motor is especially robust for its function.

An adjustable safety gap is provided to protect the high voltage windings against no load surges; an automatic cut-out is arranged to cut off the high voltage supply immediately the cover is removed to eliminate shocks; and a neon pilot gives visible indication that the ignition system is in operation.

No technical knowledge is required to operate the equipment and servicing is reduced to routine oiling and contact cleaning. Spares are available for quick despatch.

Dimensions are approximately 22 in. by 16 in. by 30 in. Weight approximately 50 lb. The apparatus, made by Runbaken Electrical Products (proprietors, Electrical and Auto Products (1931), Ltd., 71-73a, Oxford Road, Manchester, 1, is finished in attractive Bi-colour stove enamel.

VALUATION OF GAS STOCKS

The Ministry of Fuel and Power on July 11 issued the fifth list of compensation values which have been determined under Part II of the Gas Act. The list, covering over 100 securities of 37 companies, brings the total number of companies whose stocks, either wholly or in part, have been valued for compensation purposes to 216. Holders of stocks enumerated in the list became on July 11 owners of 3% British Gas Stock, 1990-95, issued at par, in amounts calculated in accordance with the rates given in the valuation. Since the stock was issued the market price has fallen, so that at current prices, after allowing for accrued interest, stock and debenture holders whose securities were extinguished on July 11 immediately lost about £5%. Except where otherwise shown, the securities in the following list are in £100 units.

Company	Compensation Value
Aberystwyth, 4% Red. Deb.	£101
Do., 5% Pref. (£10 unit)	£11/14/-
Do., Ord. (£10 unit)	£30
Do., New Ord. (£10 unit)	£22
Barnard Castle, 5% Red. Deb.	£100/5/-
Basingstoke, 4% Perp. Deb.	£101
Do., 6% Red. Pref.	£115
Do., Consol. Ord.	£130
Bridlington, 4½% Perp. Deb.	£113/10/-
Do., 3¼% Red. Deb., 1951	£100/7/6
Do., 3¼% Red. Deb., 1953	£100/12/6
Do., 4½% Red. Pref. (£10 unit)	£10/6/-
Do., Orig.† (£10 unit)	£26
Do., Addl.† (£10 unit)	£21
Bridport, 4½% Reb. Deb. (£25 unit)	£25/1/3
Do., 4% Red. Deb. (£25 unit)	£25/2/6
Do., 5% 'A' Pref. (£10 unit)	£11/4/-
Do., 6½% 'B' Pref. (£1 unit)	27/-
Do., Ord. (£1 unit)	31/-
Bude, 3½% Red. Deb., 1951	£100*
Do., 3½% Red. Deb., 1956	£100*
Chester, 3½% Deb., 1901	£99
Do., 3½% Deb., 1935	£99
Do., 4% Red. Deb.	£102
Do., 4% Pref., 1901	£102/15/6
Do., 4% Pref., 1935	£102/15/6
Do., Ord.	£123
Commercial, 4% Red. Pref.†	£100/15/-
Do., Ord.§	£108/10/-
Crewkerne, 3½% Red. Deb.	£100*
Dawlish, 5% Pref. (issued since Dec. 31, 1945) (£1 unit)	22/9*†
Eastbourne, 5% Perp. Deb.	£125
Do., 5% Pref.†	£114/10/-
Do., 4% Red. Pref.†	£100/15/-
Do., 'A' Ord.†	£127/10/-
Do., 'B' Ord.†	£110
East Grinstead, 3½% Red. Reb., 1971 (issued in June, 1946)	£103/15/8*
Do, 3½% Red. Deb., 1971 (issued in March, 1947)	£103*
Fleetwood, 4% Red. Pref., 1951	£100
Do., 4% Red. Pref., 1952	£100
Do., Ord.	£102/10/-
Harrogate, 5% Perp. Deb.	£127
Do., 4½% Perp. Deb.	£113/10/-
Do., 5% Red. Deb.	£110
Do., 6% Pref.	£134
Do., 4% Pref.	£102
Do., New Consol.	£130
Kildwick, 6% Pref. (£10 unit)	£12/15/-
Do., 4% Pref. (£10 unit)	£10
Do., Ord. (£10 unit)	£15/10/-
Leyland, 4% Red. Pref.	£101/10/2*†
Littleborough, Ord. (£10 unit)	£20/12/6
Llanelly, Orig. (£20 unit)	£44
Do., New 'A' (£20 unit)	£24
Do., New 'B' (£20 unit)	£32
Do., New Ord. (£20 unit)	£32
Do., New Ord.	£160
Long Eaton, 5½% Reb. Deb.	£104/10/-
Merthyr Tydfil, Ord.	£200
Northwich, 6% Pref. (£10 unit)	£13/4/-
Do., 5% Pref.	£112
Do., 5% Red. Pref.	£105/15/-
Do., Ord. (issued before Jan. 1, 1946)	£125
Penistone, 4½% Red. Pref. (£1 unit)	20/2
Radcliffe, Farnworth and District, 4½% Red. Deb.	£104/5/-
Do., 5% Red. Pref.	£105/5/-
Do., 4½% Red. Pref.	£104
Do., Consol. Ord.	£115
Ramsbottom, 3½% Red Deb.	£100/10/-
Do., Orig. (£10 unit)	£20/10/-
Do., Red. Scrip (£10 unit)	£14/10/-
Romford, 5% Perp. Deb.	£125¶
Do., 4% Perp. Deb.	£102/10/-
Do., 5% Red. Deb., 1950	£103/10/-
Do., 5%Red. Deb., 1951	£104
Do., 2% Red. Deb.	£97/5/-
Do., 5½% Pref.	£126
Do., 4% Red. Pref., 1958	£100
Do., 4% Red. Pref., 1963	£100
Do., 3½% Red. Pref.	£98
Do., Ord.	£121
Rossendale, 4½% Red. Deb.	£104/5/-
Do., 5% Pref. (£10 unit)	£11/4/-
Do., 10% Pref. Ord. (£10 unit)	£21
Do., 10% Max. Ord. (£10 unit)	£20/10/-
Do., 7½% Max. Ord. (£10 unit)	£15/10/-
Do., 7% Max. Ord. (£10 unit)	£14/10/-
Rugeley, 4% Red. Pref. (£1 unit)	20/2
Runcorn, 4% Perp. Deb.	£102
Do., Ord.	£111
Rushden, 3½% Red. Deb., 1971	£102/10/-*
Do., 3½% Red. Deb., 1976	£102/10/-*
Rye, 4½% Red. Debs.	£100/10/-
Do., Ord (£5 unit)	£10
Do., New Ord. (£1 unit)	£2
Scarborough, 5% Pref.	£112/10/-
Do., 5% Red. Pref.	£102/13/4
Do., 4½% Red. Pref.	£103/5/-
Do., 4½% Red. Pref.	£102/10/-
Do., Consol. Ord.	£120
Do., New Ord.	£120
Shirebrook, Ord. (£10 unit)	£21/10/-
Southwell, Orig. 5% Pref.	£102/12/6
Do., Addl. 5% Pref.	£102/4/-
Do., Orig. Ord.	£50
Do., Addl. Ord.	£35
Truro, 3½% Red. Deb., 1956	£100*
Whitby, 3½% Reb. Deb.	£100/10/-
Do., 3½% Red. Deb.	£99
Do., 3% Red. Deb.	£90
Do., 4½% Red. Pref.	£104
York, 3½% Deb.	£100
Do., 5% Red. Deb.	£104
Do., 4% 'A' Pref.	£102
Do., Ord.	£115
Yorktown (Camberley), 3½% Red. Deb. (issued since Dec. 31, 1945)	£104*

* The value of these securities has been determined by reference to the price of issue in accordance with Section 25 (5) or 25 (6) of the Act.

† More than one value applies by reference to Section 25 (7) of the Act. The average value in accordance with Section 25 (7) (*b*) is shown, and is applicable except where the issue price (Section 25 (7) (*a*)) determines the compensation value.

‡ The values of these unquoted securities has been determined in accordance with Sections 25 (10) and 26 (4) of the Act.

§ The value of these quoted securities is the value for the purposes of Section 25 (2) of the Act as increased by direction of the Minister in accordance with Section 26 (1) of the Act.

CANNON IRON FOUNDRIES SPORTS

Fine weather, keen rivalry, and a large crowd of spectators combined to make the annual sports of Cannon Iron Foundries, Ltd., an outstanding success on July 2. The programme included the finals of the lawn tennis, bowls, netball,

The Maintenance Department tug-of-war team in action.

and darts competitions, and a wide range of field events. A comic football match and a series of tug-of-war contests for both sexes were watched with enthusiasm, and dancing completed a happy day. Prizes were distributed by Mrs. A. F. Oatley, wife of the Chairman.

An interesting gas flow computer has been developed by Mr. Norman Mear, A.M.I.MECH.E., ASSOC.M.INST.GAS E., of 22, Stanley Road, Lindley, Huddersfield. The instrument, which is well constructed, is designed to solve the high pressure formula for the pressure drop in gas mains in a matter of seconds for any set of conditions. It is equally adaptable to flows at normal distribution pressures. The computer has five main scales—pressure drop; flow, diameter of main; specific gravity; length of main—and a subsidiary scale for special calculations. Any one of the five values can be found for a given set of conditions providing the other four are known.

BENDIX SELF SERVICE LAUNDERETTE

Twenty Bendix washers are now available to the public of Raynes Park. Housewives can bring their washing whenever they wish and for the cost of 2s. 6d. wash, triple-rinse and damp-dry a 9 lb. bundle.

The Mayor of Wimbledon, Alderman W. E. Hamlin, accompanied by the Mayoress, opens the Bendix Self-Service Launderette at 82, Coombe Lane, Raynes Park. On the right is Mr. R. C. Cox, Technical Director of Bendix.

The service is supplied with hot water from two Potterton Rex D6 series gas-fired boilers, having a storage capacity of 200 gal. at 160°F. The whole operation is fully automatic and thermostatically controlled. The customer weighs the laundry and places it in the washer, sets the dial, adds the soap, which is supplied. Within half an hour she returns and removes the washing and places it in a dryer which leaves the clothes in a dry-damp condition ready for ironing. Each customer can supervise her own washing in the same way as she can at home.

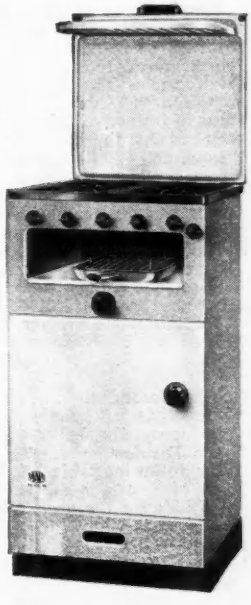
The plant is one of very few which Bendix intend to open and is, to some extent, experimental and demonstrational. The Company is now prepared to leave additional plant to individual enterprise.

MAIN 177 GAS

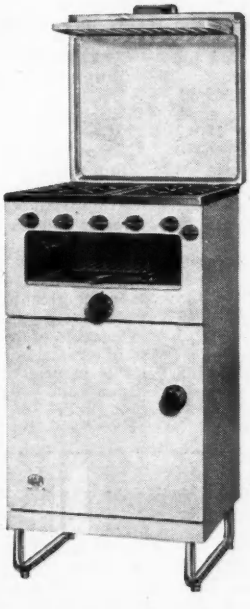
the 177 Cooker offers yet another practical feature

Here is the answer for consumers who like a cooker with a cover to close down occasionally . . . easily operated, rigidly built, and with a neat shelf that folds flat inside . . . the whole thing can be raised or lowered in a matter of seconds, and a patent locking device checks any possibility of the cover closing accidentally.

This new 177 feature is available with the standard model in dapple grey finish . . . on the deluxe cooker it is finished in cream.

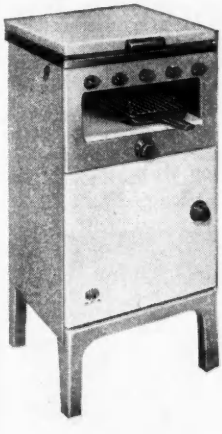


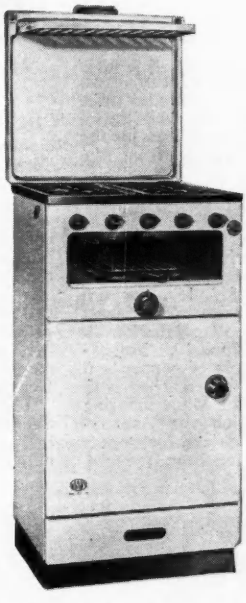
177 with hinged cover and shelf; 4 boiling burner hotplate; 16" oven; plinth base; dapple/white finish.



177 with hinged cover and shelf; 4 boiling burner hotplate; 16" oven; tubular legs; cream finish.

177 with hinged cover closed; 3 boiling burner hotplate; 14" oven; cast iron legs; dapple white finish.





177 with hinged cover and shelf; 4 boiling burner hotplate; 16" oven; plinth base; cream/black finish.

CHOICE OF 177 FEATURES

Platerack and backplate, or short splashplate . . . Hinged cover with shelf . . . Oven heights: 14" or 16". (Portal, 14" only) . . . Hotplates with 3 or 4 boiling burners and a high-speed grill . . . Cast iron legs, plinth base or tubular legs . . . finishes are in dapple/white, or cream/black.

COOKER

with a choice of interchangeable features

R. & A. MAIN LIMITED · LONDON and FALKIRK

GAS AND THE RATES

The Institute of Municipal Treasurers and Accountants has issued its *Return of Rates*, 1949-50 (5s. post free). This fourth annual return follows substantially the form of the last tabulation which embraced, as then acknowledged, the features formerly included in the returns prepared by the Borough Treasurers of Preston and Chesterfield respectively. The return contains particulars of rates levied, and in a separate section, particulars of rates levied by head of population. The figures relate to all county borough (83 in number) and Metropolitan boroughs (28) and a large and representative selection of non-county boroughs (210) and urban districts (188).

The arithmetic average rates levied for 1948-49 and 1949-50 are as follows:

	1948-49.	1949-50.
	s. d.	s. d.
County Boroughs ...	18 1	18 3
Metropolitan Boroughs	16 8	16 10
Non-County Boroughs...	18 1	18 6
Urban Districts ...	17 10	18 3

The following table briefly analyses the levels of rates for the various classes of authorities for the year 1949-50:—

	C.B.	M.B.	N.C.B.	U.D.
10s. and less than 15s.	6	1	5	9
15s. and less than 20s.	56	27	148	144
20s. and less than 25s.	20	—	57	33
25s. and over... ...	1	—	—	2
Totals ...	83	28	210	188

The second section of the return, showing rates levied by head of population, contains some interesting comparative data. For example, the arithmetic average of the rate per head of population for education is 43s. 11d. in County Boroughs, ranging from 64s. 2d. to 28s. 4d.

The first section of the return indicates the estimated transfers between trading undertakings and the rate fund and includes, for the last time, the trading profits transferred in aid of rates and losses met from rates in respect of the municipally owned gas undertakings, all of which were transferred to the area Boards on May 1. Gas profits, in terms of rate poundage transferred in aid of rates included:

Birkenhead	7d.
Burton-on-Trent	7.73d.
Batley	4.06d.
Brighouse	5.38d.
Morecambe & Heysham ...	0.12d.
Scunthorpe	5.86d.
Stourbridge	3.61d.

On the other hand losses incurred by gas undertakings were met out of the rates as follows:

Glyncorrwy (Glam.)	3.43d.
Mountain Ash	2.63d.
Swadlincote	6.18d.

In the great majority of cases, of course, profits were applied to repayment of loans, extensions of works and mains, and price stabilisation or reduction, while any losses incurred were similarly met by the department without assistance from the rate fund.

A ROYAL VISIT

The City of Nottingham has recently celebrated the Quincentenary of the grant of its Royal Charter. Included in the celebrations was a trade exhibition designed to show that 'Nottingham Can Make It,' at which Metropolitan Gas Meters, Ltd., of Hyson Green, had a stand. One of the highlights of the week's celebrations was the visit of Princess Elizabeth and the Duke of Edinburgh, who spent an hour at the exhibition. The Lord Mayor, Alderman W. Sharp, who is employed by Metropolitan Gas Meters, Ltd., as a sheet metal worker, proudly introduced the royal visitors to his Company's stand and presented to them Mr. H. Adcock, Director and General Manager.

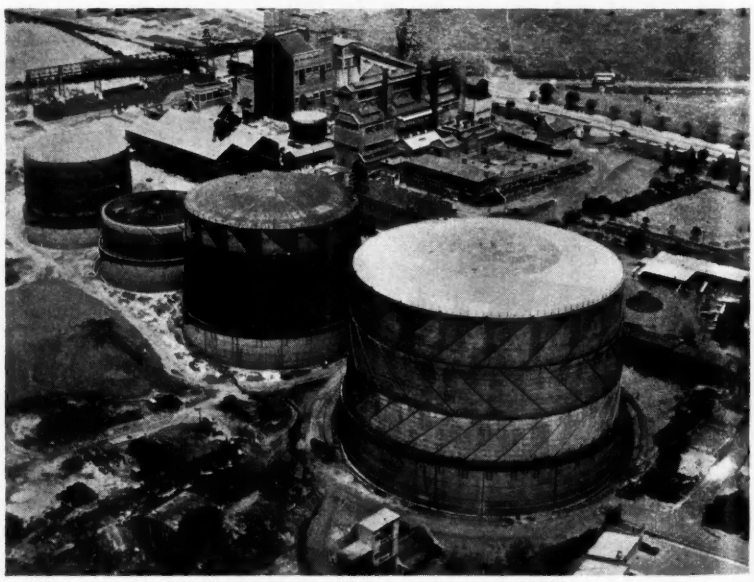
The Lord Mayor called the Princess's attention to two portraits of himself, one in his civic robes and the other showing him at work on his bench.

Mr. H. Adcock, Director and General Manager, at the stand.

COALITE AND CHEMICAL PRODUCTS, LTD.

The report and accounts of Coalite and Chemical Products, Ltd. (formerly Low Temperature Carbonisation, Ltd.) for the year ended Mar. 31 show a gross balance on profit and loss account of £384,003, compared with £428,356 for the previous year. Net profit, however, was £151,932, showing a slight increase over the £149,965 recorded in the previous year. An interim dividend of 4% has already been paid and it is now proposed to transfer £70,577 to general reserve and to pay a final dividend of 2%, leaving a carry-forward of £155,648. The consolidated balance sheet discloses that the profits carried forward and sundry reserves amount to £534,263 and the current assets to £1,165,506, indicating that a satisfactory liquid position was maintained during the year. The Directors state that what was a sellers' market for the Company's liquid products has now become one of greater competition, and some reduction in earnings must be expected. Following delays in obtaining materials, the first two new sections of the refinery have been put to work and a third new section will follow shortly. These additions will increase refining flexibility, and by the introduction of new and improved products will, it is hoped, go a long way towards counteracting the effect of changed market conditions. Throughput increased by 12½% during the year as a result of the completion and putting to work of three new batteries of retorts at intervals. This additional throughput offset to a large extent increased operating costs that could not be adequately reflected in the increased price of Coalite. Regret is expressed in the report at the death of Colonel W. A. Bristow and Lord Hazlerigg, the Chairman and Deputy Chairman respectively. Commander Colin Buist is now Chairman.

As a result of a decrease in the cost of lead, the Ministry of Works has confirmed a reduction of £13 15s. per ton in the maximum selling price of lead sheet and pipe. This reduction operates on all sales made on and after June 10. Following reductions in the prices of copper and zinc, an agreement has been reached with the Scottish Association of Manufacturing Coppersmiths under which the Association's maximum selling prices for copper cylinders and boilers have been reduced.



In the foreground of this photograph of the Johannesburg gasworks can be seen the new 3 mill. cu.ft. gasholder, details of which were given in the Journal *of April 13, following its completion last February.*